REMARKS

Amendments to the Claims

Upon entry of the present amendments, claims 1-25 are pending.

Independent claims 1 and 13 are amended to specify that the layer of protective-carrier sheeting extends from a source (*e.g.*, a roll); support for this amendment is found, *e.g.*, in the paragraph bridging pages 7 and 8 of the application, as filed. Claim 1 is also amended to specify that "one" of the conductive-foil layers is covered with a dielectric in part (b); support for this amendment is found, *e.g.*, in the paragraph that bridges pages 8 and 9 of the application, as filed.

Claims 10 and 22 have been amended to put them in independent form, the amended claims incorporating the subject matter of the claims from which claims 10 and 22 respectively depended. The scope of each of these claims remains unchanged.

Accordingly, the present amendments do not introduce new matter.

Each of the objections and grounds for rejection cited in the Office Action is addressed below, under an appropriate sub-heading.

Objection to the Specification

The examiner objected to the specification as failing to provide proper antecedent basis for the subject matter of claim 1. Accordingly, claim 1 has been amended to specify that "one" of the conductive-foil layers is covered with a dielectric layer in each sequence. Applicants respectively submit that this amendment clarifies that claim 1 can cover, *e.g.*, the process described in the paragraph bridging pages 8 and 9.

35 U.S.C. §102: Claims 13, 14, 17-20 and 24

Claims 13, 14, 17-20 and 24 were rejected under35 U.S.C. §102(b) as being anticipated U.S. Patent 5,853,528, issued to Maeda *et al.* (the patent hereafter referred to as "Maeda").

Claim 13 has been amended to specify that the layer of protective-carrier sheeting that covers at least one of the layers of conductive foil extends from a protective-carrier-sheeting source (*e.g.*, a roll). Consequently, the layer of protective-carrier sheeting can remain covered

throughout almost the entirety of the laminate fabrication process, thereby protecting the protective-carrier sheeting from contamination. Claims 14, 17-20 and 24 depend from claim 13 and, consequently, likewise incorporate this limitation.

In the methods of Maeda, the conductive-foil layers (3 and 4) are separated by synthetic resin sheet members (9) and by interlayers (10). The "interlayers" of Maeda appear to be the closest corollary of Applicants' "protective-carrier sheeting" layers. However, the interlayers of Maeda are supplied in the form of discrete sheets that do not extend from a source (*e.g.*, a roll). Absent covering, the interlayers of Maeda are more readily subject to contamination before and during the assembly of the laminate. Further, Maeda offers no suggestion or motivation for providing a source (*e.g.*, a roll) of its interlayer material configured so that the interlayer material can contact a conductive-foil layer as it is extended from its source.

Consequently, Maeda does not anticipate (or render obvious) Applicants' amended claims; and Applicant respectfully requests that this rejection be reconsidered and withdrawn.

35 U.S.C. §102/§103: Claims 1, 2, 5-7 and 25

Claims 1, 2, 5-7 and 25 were rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §13(a), as being obvious in view of U.S. Patent 6,158,492, issued to Vomberg (the patent hereafter referred to as "Vomberg").

Claim 1, as amended, specifies that the layer of protective-carrier sheeting extends from a protective-carrier-sheeting source (*e.g.*, a roll). Consequently, the layer of protective-carrier sheeting can remain covered throughout almost the entirety of the laminate fabrication process and thereby protected from becoming contaminated. Claims 2, 5-7 and 25 depend from claim 13 and, consequently, incorporate this limitation.

In the methods of Vomberg, a "press plate" (2) is sandwiched between conductive foils (12). However, the press plates (2) cannot be equated with the layer of protective-carrier sheeting in Applicant's claim 1 because the press plate (unlike the conductive foils) does not extend from a source. Further, Vomberg also fails to suggest extending a layer of protective-carrier sheeting from a source as it is sandwiched between conductive-foil layers.

Consequently, Applicants respectfully submit that these claims are novel and non-obvious in view of Vomberg and respectfully request that this rejection be reconsidered and withdrawn.

35 U.S.C. §103: Claims 3, 4, 8, 9, 11 and 12

Claims 3, 4, 8, 9, 11 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Vomberg as applied to claims 1, 2, 5-7 and 25 and further in view of WO 00/16596 (this published PCT application hereafter referred to in the name of the inventor/applicant, "Pedretti").

Each of these claims depends directly or indirectly from claim 1 and therefore incorporates its limitations. These claims can be distinguished from Vomberg based on the amended limitations in claim 1, discussed above. Furthermore, the United States Patent and Trademark Office suggested that Vomberg teaches all of the limitations of claims 3, 4, 8, 9, 11 and 12, except for a specific teaching of the material for the protective-carrier sheeting. However, contrary to the PTO's assertion, the limitations of claims 9 and 11 (relating to the unwinding of the protective-carrier sheeting from a roll) do not appear in Vomberg, as Vomberg appears to disclose only the unrolling of conductive foil layers (9) from a coil but not the unrolling of protective-carrier sheeting, nor is the unrolling of protective-carrier sheeting suggested in Vomberg.

Pedretti discloses the provision of aluminum sheeting on a roll; the aluminum sheeting is bonded to the conductive-foil layers, as noted in the Office Action. Accordingly, the methods of Pedretti resemble those described in the Background section of the present application, wherein copper foil is ultrasonically welded to a strip of aluminum or steel in a slow process that requires multiple machines.[1] Likewise, in the methods of Pedretti, "the actual construction of an electrical grade laminate becomes a secondary operation, making the process more costly due to the additional handling, packaging, shipping and assembly steps required."[2] Consequently, Pedretti offers no teaching, suggestion or motivation for incorporating a continuous source of protective-carrier sheeting into an apparatus for assembling laminates wherein a dielectric layer

[1] *See* the present application (USSN10/044,628), page 2, last full paragraph.

[2] *See id.*, paragraph bridging pages 2 and 3.

is sandwiched between conductive-foil layers; and the conductive foil layers, in turn, are covered with the protective-carrier sheeting.

Absent any teachings, motivations, or suggestions in Pedretti for using the source of protective-carrier sheeting in a method for producing a laminate (including the dielectric layer) without bonding the protective-carrier sheeting to a conductive-foil layer, Pedretti does not render the above claims obvious.

Moreover, a selective combination of particular teachings from Vomberg and Pedretti to produce a method satisfying the limitations of these claims is not warranted absent any teaching, suggestion or motivation in either reference for combining those particular teachings.[3] Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

35 U.S.C. §103: Claims 15, 16, 21 and 23

Claims 15, 16, 21 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maeda as applied to claims 13, 14, 17-20 and 24 and further in view of Pedretti.

Each of these claims depends directly or indirectly from claim 13 and therefore incorporates its limitations. These claims can be distinguished from Maeda based on the amended limitation in claim 13, discussed above. Furthermore, the United States Patent and Trademark Office suggested that Maeda teaches all of the limitations of claims 13, 14, 17-20 and 24, except for a specific teaching of the particulars of the protective-carrier sheeting. Nevertheless, the United States Patent and Trademark Office suggested that it would have been obvious to one of ordinary skill in the art to use protective-carrier sheets as taught by Maeda any well known and conventional aluminum protective-carrier sheets such as those shown in Pedretti.

As noted, above, although Pedretti discloses the use of a roll of aluminum sheeting and sandwiching unrolled aluminum sheeting between sheets of copper, Pedretti subscribes to a

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[3] *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (a determination of obviousness based on a combination of references requires "actual evidence" of a suggestion, teaching or motivation to combine the teachings of the references); *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'").

different approach for laminate fabrication. *I.e.*, Pedretti is directed to a first stage of the process, wherein a copper-aluminum-copper laminate is formed and bonded to protect the internal surfaces during storage and shipping. In a latter, second stage the copper-aluminum-copper laminate would be delivered to a PCB laminate assembly facility where the copper-aluminum-copper laminates would be alternately stacked with dielectric layers to form and press copper-dielectric-copper laminates. These two stages can be effectively combined in methods of the present invention, thereby eliminating the need to bond the layers before pressing. Pedretti fails to offer any disclosure, suggestion or motivation for employing its roll of aluminum sheeting in a PCB-laminate fabrication process. Absent evidence of such a teaching suggestion or motivation for selectively combining teachings from Maeda and Pedretti, the amended claims are non-obvious in view of these references.[4]

Further still, neither reference offers any guidance for fabricating an apparatus with elements configured so as to enable drawing not only the conductive foil layers but also protective-carrier sheeting from respective sources (or from the same source) **and also** enabling the sandwiching of a dielectric layer between the conductive foil layers without needing to bond any layers before stacking and pressing the conductive-foil/dielectric/conduct-foil laminate structures.

Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Allowable Subject Matter

The United States Patent and Trademark Office objected to claims 10 and 12 as being dependent upon a rejected base claim but indicated that these claims would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

[4] *Id.*

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request that the outstanding objections and rejections be withdrawn and that a timely notice of Allowance be issued in this case. If there are any questions regarding these amendments and remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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